

Pennsylvania Coastal Zone Management Program

Fairmount Water Works Interpretive Esplanade

Phase III Exhibits – Final Report

September 1996

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A REPORT OF THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES
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**Fairmount Water Works Interpretive Esplanade
Phase III (Stations 2 and 5) – CZM:95.02PD
Final Report**

Project Background

For nearly 200 years, the Philadelphia Water Department (PWD) has been charged with supplying the city with a plentiful supply of pure water. Founded in 1798 as the Watering Committee, the PWD is now one of the nation's largest municipal water agencies – treating both the city's drinking and waste water. During the 1970s, new EPA-mandated clean water regulations created a need for greater public education in order to explain the necessity of subsequent changes to the city's water infrastructure and the accompanying rate increases.

The PWD's commitment to education is showcased at the Fairmount Water Works.

The Water Works was the primary source of Philadelphia's drinking water between 1815 and 1909. This National Historic Landmark is now the site of the Interpretive Center and its Interpretive Esplanade – two of the key components of the PWD's educational mission. The Interpretive Center is committed to attracting and serving a culturally diverse audience which includes school children, educators, community organizations, special interest groups, senior citizens, and casual visitors.

The Interpretive Esplanade serves as the Interpretive Center's outdoor classroom and gallery; it is also widely used by the general public for strolling, viewing the exhibits, fishing, and relaxing. The six exhibits which line, and in some cases form, the walkway provide a chronological interpretation of the history of the city's use of the Schuylkill River – from the time it provided sustenance for the local native American population, through its use and subsequent abuse by local industries, and finally to its reclamation through proper waste water treatment beginning in the 1970s and continuing with ever-increasing effectiveness through today.

The design, construction, and installation of the Esplanade walkway and exhibits was jointly funded by the Philadelphia Water Department and the Coastal Zone Management program. The restoration of the historic Esplanade and design of the Interpretive Esplanade were completed under CZM grant 86-PD.04. The construction of the walkway utilized grant 92-PD.02 and the first four of the six exhibits were designed, fabricated, and installed under grant CZ1:93.02PD.

The present CZM grant provides for the placement of the final two exhibits, completing the interpretive plan of the Esplanade. The firm of Tourbier & Walmsley was contracted for this project by the PWD as they had been for several other work phases. Station 2 is entitled "Transportation and Water Power in the 1700s" and depicts elements of a typical Schuylkill River ferry landing. The interpretive plaque discusses some of the early uses of the river by European settlers – for ferries carrying produce from western farmlands, for canals and river transportation, and for power to run grist, saw, and paper mills. Station 5, "Philadelphia's Industrial Age, 1865-1920," emphasizes the abuse of the river by the industries that proliferated through the 19th and 20th centuries. Sculptural signposts line this section of the walkway each representing a specific company used and, in most cases, polluted river water. The development and installation of these exhibits through the course of the grant period (July 1995 to September 1996) is detailed in the next section.

Project Report

July - November 1995:

This period was primarily devoted to the negotiation and preparation of the contracts required for work on the project to begin. The grant agreement between the Pennsylvania Department of Environmental Resources (DER) and the Philadelphia Water Department (PWD) became effective on July 1, although certain aspects of the contract were refined over the subsequent months. The contract (or "provider agreement") between the PWD and Tourbier & Walmsley, Inc. required several months to get all of its elements in place; it was signed in mid-November at which time we began a series of design meetings.

November 1995 - February 1996:

The conceptual and interpretive schemes of the Esplanade were outlined as early as 1988. Each station would have a grade-level, cast metal interpretive plaque containing a central image surrounded by text. Station 2 would be reminiscent of a ferry landing with bollards along the river wall, cobblestone paving, and sculptures indicating typical objects associated with such sites. The walkway through Station 5 would be lined with tall metal posts topped by vertical squares of sheet steel containing cutouts of industrial imagery (company logos, advertising, etc.). Even with this fairly solid conception, the actual details of the design of Stations 2 and 5 took quite awhile to work out.

Design meetings were held every 2-4 weeks during this period; present at each were the contractor/designer (Anthony Walmsley), his subcontractor/fabricator (Steve Sears), and PWD Public Education Unit staff members (Ed Grusheski, Drew Brown, and Jay Platt). The primary goal of these meetings was to take the rather general early designs for the exhibits and make them more historically accurate and appropriate to the site.

Early decisions that came out of these meetings included: the use of the Star Alpaca Braid image as the graphic used on the Station 5 plaque, the placement of the turbine section (which a subconsultant later determined to be a fragment of a bevel gear) on the Station 5 plinth, and the inclusion of three (rather than 5) sculptural elements on the Station 2 ferry landing so that better-quality objects could be produced within the project's budget. These elements – a wheelbarrow laden with produce, a barrel, and a covered basket – were to be based on 18th century drawings in order to accurately reflect the interpretive date of the exhibit. The aesthetic appropriateness of the Station 5 signposts was originally questioned, but after mock-ups were installed on the Esplanade, the decision was made to go ahead with them.

The original image intended for the Station 2 plaque – a depiction of a bell-shaped Upper Ferry sign – was rejected because there was no indication that such a sign had existed at the site. Considerable research at various historic archives in the city turned up a map which showed the Upper Ferry landing to be very close to the present-day Esplanade; this map was later adapted for use on the plaque. Most of the industrial images originally suggested for the Station 5 signposts were also changed during the course of these meetings. It was decided that industries within the Schuylkill River watershed should be the primary focus of the exhibit and that the signs should emphasize the diversity of the types of river-based industries that used and polluted the river. This led to another round of archival research in order to find images that not only fulfilled these requirements, but also would work as cutouts.

By February, most of the major decisions about the design of the stations were made. Fine tuning of the designs continued as the date of the various elements' fabrication approached – discussions often focused on things such as how many lines of text should be on a plaque or how

many periods should be in a specific ellipsis. The images for each plaque also required a great deal of refinement so that they could be effectively transferred from the two-dimensional page to the much larger, three-dimensional plaque – both computers and hand-drawing were used in this process.

March - August 1996:

The fabrication and installation of all aspects of the exhibits took place during this period. Work was planned to accommodate the different schedules and workloads of the group of subcontractors who were involved in this phase. Unfortunately, this planning was regularly upset by a particularly rainy summer, some soil instability at Station 5, and by several unexpected complications in the fabrication of the Station 2 sculptures – particularly the basket. The work components undertaken at each station are laid out below in roughly chronological order:

Station 2 –

- Plaque design finalized and sent to foundry (took approx. two months to complete).
- Sculpture fabrication, based on full-scale mock-ups, begun by Sears Iron Works.
- Soil removed from planting beds that would become ferry landing site; concrete knock-out panel removed at location of plaque.
- Form work built for new sections of walkway adjacent to plaque. These were a later addition to the project designed to accommodate foot traffic from tour boats that may dock at the site in the near future.
- Bollards placed along river wall; gravel and reinforcing wire placed in areas of soil removal. Bolts to secure sculptures put in place.
- Concrete pour – below grade for areas with bollards, at grade for two new walkway sections (which were successfully tinted to match the existing paving).
- Plaque delivered and installed.
- Cobblestones laid out on low concrete sections and cemented into place.
- Barrel installed (late August).
- Wheelbarrow installed (mid-September).
- Basket installed (mid-September) – exhibit completed.

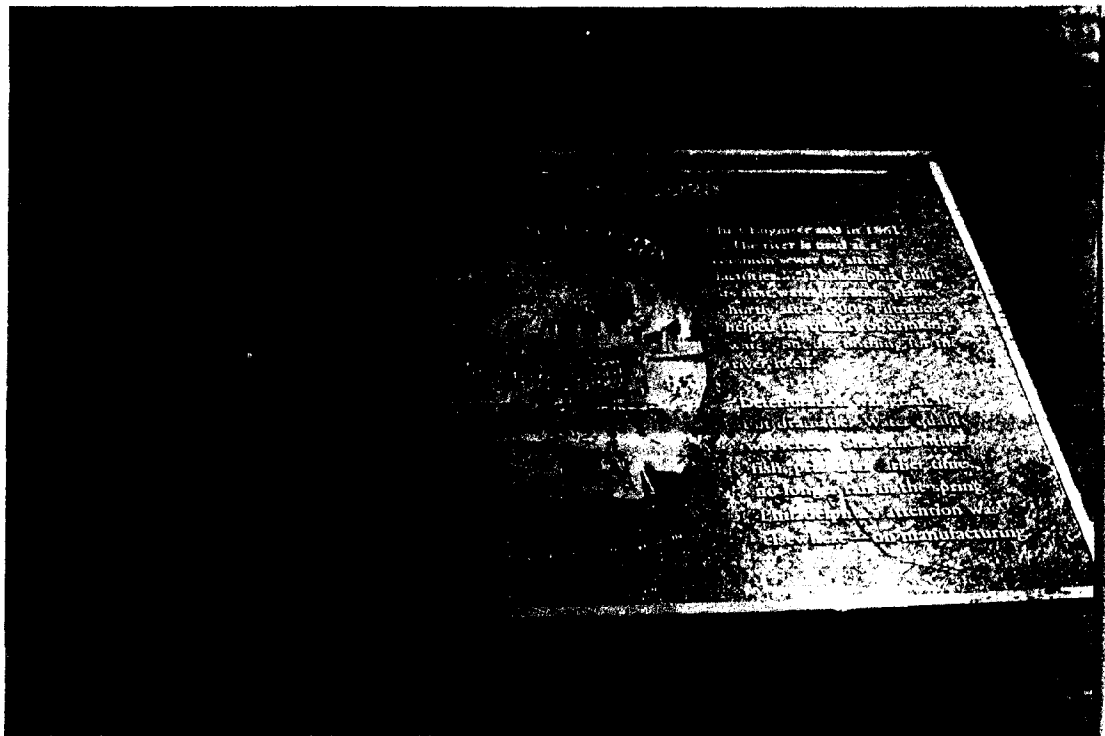
Station 5 –

- Plaque design finalized and sent to foundry (finished approximately two months later).
- Final design of all 10 industry signs transferred to computer discs and sent out to subcontractor (along with the sheet steel) for precision laser cutting of the images.
- Concrete knock-out panel removed at location of plaque.
- Holes for signpost footings dug, reinforcing steel and bolts for securing I-beam bases in place.
- Concrete poured for footings.
- Form work installed and concrete top poured for pad on top of the plinth. The plinth's stonework was repointed as well.
- Interpretive plaque installed.
- Steel base for the bevel gear fragment attached to new concrete pad on the plinth.
- Test of finished footings showed that the potential leverage provided by the 10-foot tall posts could affect the stability of the five footings on the riverside of the walkway. These were stabilized with the addition of a larger, concrete top section to the footing and diagonal steel bracing placed underground.
- Cut-outs back from the shop; graphics for each sign prepared for silk-screen shop.
- Images silk-screened in white onto the matte black signs. Small interpretive plaque for the bevel gear fragment silk-screened.

- Bevel gear fragment (all 2020 pounds of it) lowered by crane onto plinth and attached. This work was postponed four times by rainstorms that made the ground of the South Garden too soft to support the crane. Plaque installed on base.
- I-beam posts attached to footings.
- Finished cutouts attached to top of posts.
- The secured signposts showed an unexpected amount of flexibility in one direction which was seen as a potential problem in case they were vigorously shaken. To solve this, the lower three feet of each I-beam was boxed in with additional steel and welded, creating a square, rather than I-shaped, sectional profile. This design solution was chosen because of its limited impact on the shape and visual impact of the signposts.

The completion of Stations 2 and 5 has enhanced both the beauty and the interpretive power of the Esplanade. The sculptures on the “ferry landing” are remarkably successful – both as an evocation of the past and as cleverly designed objects of inherent beauty. The signposts along the Station 5 walkway are also highly effective; each of the ten signs tells a specific story which can be explored in depth when the Esplanade is toured with one of the Interpretive Center volunteer tour guides.

The story told by the Esplanade’s exhibits is now complete. The importance of the Schuylkill River and the varied uses that have been made of it is made clear to both casual visitors strolling past the exhibits and people on organized tours. The site is now well used and its popularity seems to be increasing. The Water Works Interpretive Center is committed to the continued maintenance and improvement of the Esplanade and expect that it will become one of Philadelphia’s most popular, and important, riverside locations.



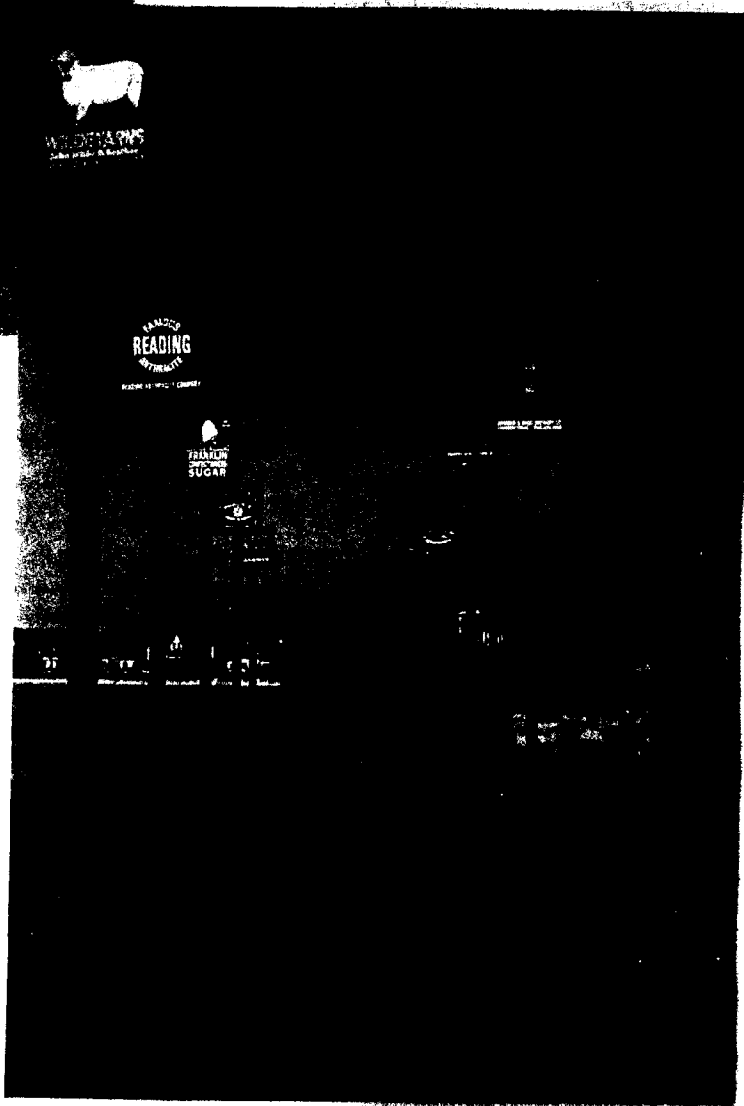
↑ Station 5 plaque after installation.



← The bevel gear being lowered by crane. Signpost installation in progress.



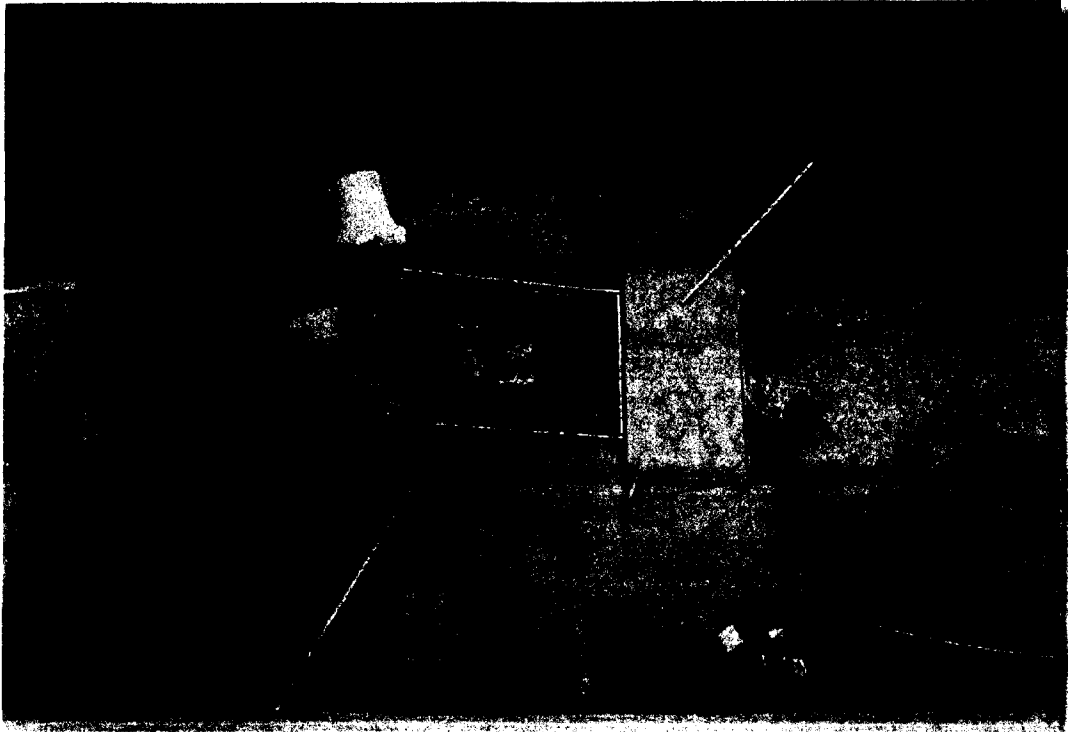
← The bevel gear in place.



View through signposts toward
Boat House Row →



Overview of Station 5 signposts.



↑ Station 2 plaque being installed.

↓ Station 5 plaque and cobblestones in place.





↑ Wheelbarrow laden with black
melons (a.k.a. 18th c. cantaloupes)



← The barrel and basket sculptures
in place.



Overview of Station 2 exhibits.

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